

Picrasma pauciflora (Simaroubaceae), a new species from the NE coast of Cuba

Authors: Noa-Monzon, Alfredo, and Gonzalez-Gutierrez, Pedro Alejandro

Source: Willdenowia, 49(2) : 187-191

Published By: Botanic Garden and Botanical Museum Berlin (BGBM)

URL: <https://doi.org/10.3372/wi.49.49207>

The BioOne Digital Library (<https://bioone.org/>) provides worldwide distribution for more than 580 journals and eBooks from BioOne's community of over 150 nonprofit societies, research institutions, and university presses in the biological, ecological, and environmental sciences. The BioOne Digital Library encompasses the flagship aggregation BioOne Complete (<https://bioone.org/subscribe>), the BioOne Complete Archive (<https://bioone.org/archive>), and the BioOne eBooks program offerings ESA eBook Collection (<https://bioone.org/esa-ebooks>) and CSIRO Publishing BioSelect Collection (<https://bioone.org/csiro-ebooks>).

Your use of this PDF, the BioOne Digital Library, and all posted and associated content indicates your acceptance of BioOne's Terms of Use, available at www.bioone.org/terms-of-use.

Usage of BioOne Digital Library content is strictly limited to personal, educational, and non-commercial use. Commercial inquiries or rights and permissions requests should be directed to the individual publisher as copyright holder.

BioOne is an innovative nonprofit that sees sustainable scholarly publishing as an inherently collaborative enterprise connecting authors, nonprofit publishers, academic institutions, research libraries, and research funders in the common goal of maximizing access to critical research.

ALFREDO NOA-MONZÓN^{1*} & PEDRO ALEJANDRO GONZÁLEZ-GUTIÉRREZ²

Picrasma pauciflora (Simaroubaceae), a new species from the NE coast of Cuba

Version of record first published online on 27 June 2019 ahead of inclusion in August 2019 issue.

Abstract: *Picrasma pauciflora*, a new species from the NE coastal fringe of Cuba, is described and compared with other species of the genus occurring in Cuba, from which it differs by being a tree, by the number of leaflets and by having fewer flowers per inflorescence. Aspects of its distribution and habitat are provided as well as an identification key to the Cuban species of *Picrasma*.

Key words: Cuba, endemism, Holguín, new species, phytogeographic district Gibarense, *Picrasma*, rosid eudicots, Sapindales, Simaroubaceae, taxonomy

Article history: Received 30 December 2018; peer-review completed 6 April 2019; received in revised form 22 April 2019; accepted for publication 15 May 2019.

Citation: Noa-Monzón A. & González-Gutiérrez P. A. 2019: *Picrasma pauciflora* (Simaroubaceae), a new species from the NE coast of Cuba. – Willdenowia 49: 187–191. doi: <https://doi.org/10.3372/wi.49.49207>

Introduction

Picrasma Blume (Simaroubaceae) was described based on *P. javanica* Blume from the island of Java (Blume 1825). The genus comprises nine species, two of them from Asia and the remainder from the neotropics; eight species were reported by Clayton (2011) and one was recently described by Palacios (2015) from Ecuador. The species of *Picrasma* are androdioecious trees or shrubs with imparipinnate leaves with entire or serrate margins, axillary or terminal inflorescences, 4- or 5-merous flowers, alternipetalous stamens, an apocarpic ovary with a fleshy intrastaminal disk, and a fruit composed of 1–3(–5) free, drupaceous, globose mericarps.

For the Cuban archipelago, three species of *Picrasma* have been reported: *P. cubensis* Radlk. & Urb. and *P. excelsa* (Sw.) Planch. grow in W Cuba, whereas *P. tetramera* (Urb.) W. W. Thomas & al. is endemic to C Cuba (Thomas & al. 2011).

In October of 1978, during an expedition organized by

National Botanical Garden of Cuba, Johannes Bisse and a group of Cuban and Hungarian botanists found sterile plants, which were collected and later preserved at HAJB under the number A. Álvarez & al. HFC 38198, without any identification. As part of the studies that are being carried out for the revision of Simaroubaceae in Cuba, the collections of HAJB were critically studied and the above-mentioned specimen was found and identified as *Picrasma*. Further comparison with specimens of the three other species of *Picrasma* occurring in Cuba suggested that it could represent an undescribed species. The lack of flowers and fruits, however, frustrated the description of the new species until botanists of the province of Holguín, in May of 2017, discovered a population of *Picrasma*, with flowers and fruits, presumably the same population found by Johannes Bisse and collaborators 39 years earlier. As previously suspected, characteristics of the leaves and inflorescences of the plants collected at Loma El Templo in Holguín province differ from the other Cuban *Picrasma*, and it is described here as a new species.

1 Jardín Botánico de Villa Clara, Universidad Central “Marta Abreu” de Las Villas, Facultad de Ciencias Agropecuarias, Carretera a Camajuaní km 5½, Santa Clara, Cuba; *e-mail: anoa@uclv.edu.cu (author for correspondence).

2 Centro de Investigaciones y Servicios Ambientales de Holguín (CISAT), CITMA, Calle 18 sn, entre 1ª y Maceo, Reparto “El Llano”, Holguín 80 100, Cuba; e-mail: pagg@cisat.cu, pagg74@yahoo.es

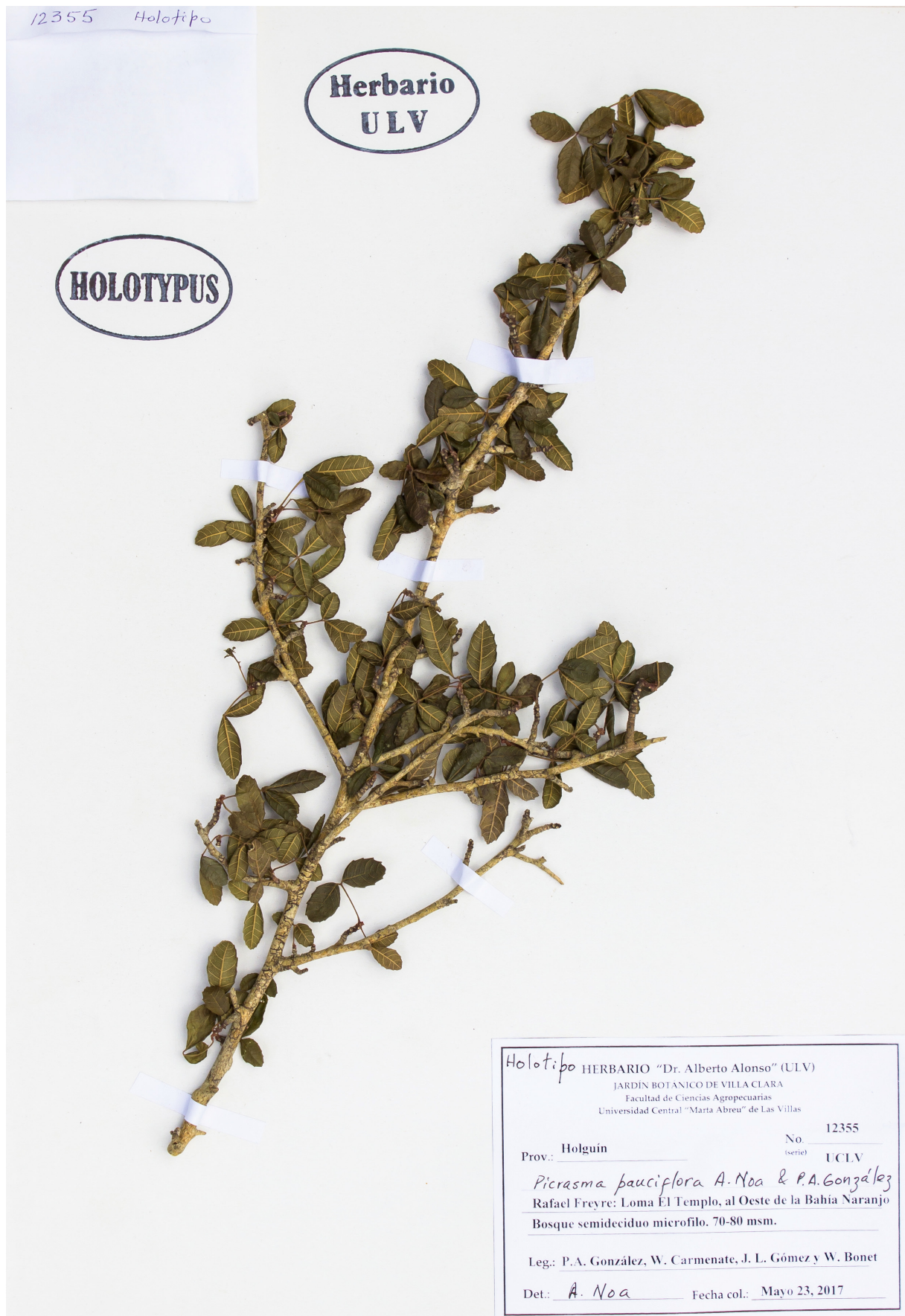


Fig. 1. Holotype of *Picrasma pauciflora*, González & al., UCLV#12355 (ULV). – Photograph by Arnaldo Toledo.



Fig. 2. *Picrasma pauciflora* – A: leaf showing number of leaflets and their abaxial surface; B: bisexual flower with tiny, immature fruits; C: drupaceous mericarps; D: drupaceous mericarp in lateral view, showing gynophore developed from intrastaminal disk. – All photographs taken at: Cuba, Holguín, Rafael Freyre, Loma El Templo, 23 May 2017; A, B: by José Luis Gómez-Hechavarría; C, D: by Pedro A. González-Gutiérrez.

***Picrasma pauciflora* A. Noa & P. A. González, sp. nov.**
– Fig. 1, 2.

Holotype: Cuba, province of Holguín, municipality of Rafael Freyre, Loma El Templo, al oeste de la Bahía Naranjo, 70–80 m, bosque semideciduo microfolio, 23 May 2017, P. A. González, W. Carmenate, J. L. Gómez & W. Bonet, UCLV#12355 (ULV! [Fig. 1]; isotypes: B!, HAC!, HAJB!, PAL-Gr!, ULV!).

Morphological diagnosis — *Picrasma pauciflora* is similar to *P. cubensis* and *P. tetramera* by having dentate

leaflets with prominent veins, but it differs from them by being a small tree and by having smaller leaves (3–4 cm long), fewer leaflets (3–5) per leaf, and fewer flowers (2–4) per inflorescence. Table 1 shows characteristics that distinguish all four species of *Picrasma* distributed in Cuba.

Morphological description — Trees small, androdioecious, 4–5 m tall. Leaves 3–4(–6) cm long (Fig. 2A); petiole 7–10(–14) mm long; leaflets 3–5, elliptic or less commonly obovate; lateral leaflets opposite or sub-

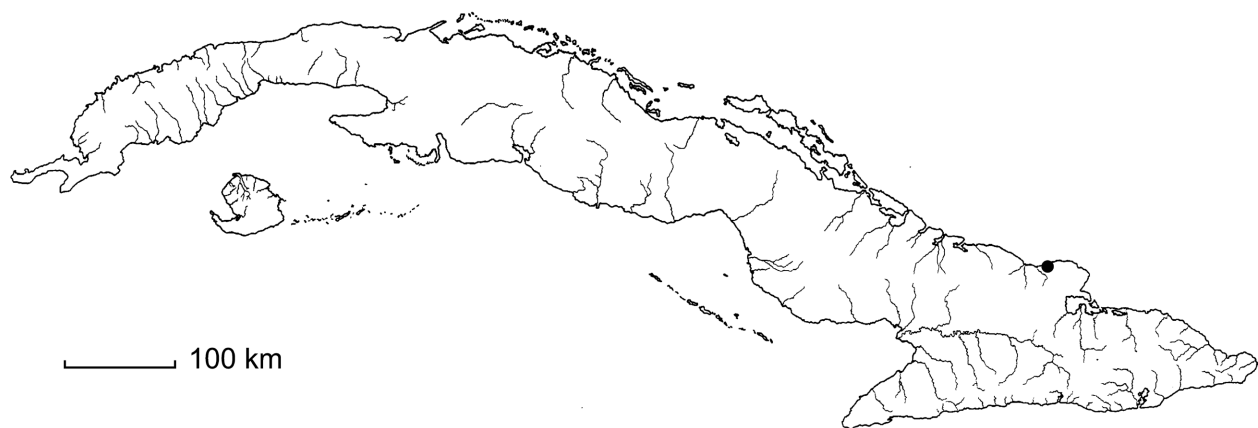


Fig. 3. Map showing distribution of *Picrasma pauciflora* (●) at Loma El Templo in Holguín province, Cuba.

opposite, subsessile, 1–1.5 × 0.5–0.7 cm, base cuneate, margin dentate (with 6–14 pairs of small teeth), slightly revolute, apex acute; *terminal leaflet* 1.8–2.5(–3.5) × 0.5–1(–1.5) cm; *venation* pinnate, reticulate abaxially, midvein and secondary veins conspicuous on both surfaces, prominent abaxially, secondary veins in 6–14 pairs, scattered hairs present on midvein and secondary veins on both surfaces, but more abundant on midvein abaxially, glabrescent. *Inflorescence* a 2–4-flowered cyme; *pedicels* 2.5–3 mm long, pubescent. *Flowers* bisexual or staminate; *bisexual flowers* 4- or 5-merous, c. 3 mm in diam.; *sepals* green with apex reddish, obovate-spatulate, ≤ 1.2 mm long, densely pubescent abaxially, margin dentate; *petals* green, ± obovate-spatulate, 1.8–2 × c. 1.2 mm in widest part, glabrous; *stamens* as many as petals (4 or 5); *filaments* inserted on intrastaminal disk, c. 1.2 mm long, glabrous; *anthers* dorsifixed, yellow, c. 0.4 × 0.3 mm; *ovary* apocarpic (Fig. 2B); *style* fused; *stigmas* free. *Staminate flowers* not seen. *Fruits* 1–3(–5) free, drupaceous mericarps, each mericarp turning red when ripe (Fig. 2C), globose, c. 6 mm in diam.,

with gynophore developed from intrastaminal disk (Fig. 2D), calyx persistent. *Seeds* c. 4 mm in diam.

Phenology — The species has been collected in flower and fruit in May.

Distribution and ecology — *Picrasma pauciflora* is a strict endemic of the coastal fringe of the province of Holguín in NE Cuba. It has been collected only at Loma El Templo west of Bahía Naranjo, in the municipality of Rafael Freyre (Fig. 3). It grows in microphyllous, semi-deciduous forest (Capote & Berazaín 1984) with other trees species including: *Ateleia* sp., *Bursera simaruba* (L.) Sarg., *Coccoloba diversifolia* Jacq., *Guapira obtusata* (Jacq.) Little, *Hyperbaena cubensis* (Griseb.) Urb. and *Ziziphus bullata* (Urb.) Borhidi. In the understory of this forest the shrub species include: *Malpighia linearifolia* F. K. Mey., *Ravenia spectabilis* subsp. *leonis* (Vict.) Beurton and *Trichilia pungens* Urb. The vines *Mascagnia lucida* W. R. Anderson & C. Davis and *Stigmaphyllon sagranum* A. Juss. are abundant.

Table 1. Comparison of the species of *Picrasma* distributed in Cuba.

Character	<i>P. cubensis</i>	<i>P. excelsa</i>	<i>P. pauciflora</i>	<i>P. tetramera</i>
Habit	shrub, 2–3 m tall	tree, 6–25 m tall	small tree, 4–5 m tall	shrub, 1–2 m tall
Rachis of leaf	slightly winged	not winged	not winged	not winged
Number of leaflets per leaf	c. 7	5–13	3–5	5–7
Size of lateral leaflets	3.4–5.3 × 1.3–2.6 cm	4.5–10 × 2–4 cm	1–1.5 × 0.5–0.7 cm	2.2–4.4 × 1.2–2.5 cm
Size of terminal leaflet	3.5–4.5 × 1.5–2.5 cm	5–7.5 × 2–3.5 cm	1.8–2.5(–3.5) × 0.5–1(–1.5) cm	2.3–5.5 × 1.3–2.5 cm
Margin of leaflets	dentate, not revolute	entire, slightly revolute	entire, slightly revolute	dentate, revolute
Adaxial venation of leaflets	not sunken	not sunken	not sunken	sunken
Number of flowers per inflorescence	5–10	10–∞	2–4	10–∞
Distribution in Cuba	W Cuba: province of Artemisa	W Cuba: province of Pinar del Río	E Cuba: province of Holguín	C Cuba: provinces of Cienfuegos, Villa Clara and Sancti Spiritus

Conservation status — The population of *Picrasma pauciflora* comprises fewer than 20 individuals in an area of 400 m² growing near to a path that crosses the forest. For this reason the only known population of the species could disappear after the occurrence of stochastic meteorological events like hurricanes or by human activities such as logging, accidental fires or wrong management of the forest where it grows. Taking into account this situation and according to IUCN criteria (IUCN 2012), *P. pauciflora* must be classified as Critically Endangered: CR B1ab(iii,v)+2ab(iii,v); D.

Etymology — The specific name refers the presence of few flowers in the inflorescences.

Additional specimens seen — CUBA: PROVINCE OF HOLGUÍN: municipality of Rafael Freyre: Loma El Templo, al oeste de la Bahía de Naranjo, 17 Oct 1978, A. Álvarez de Zayas, J. Bisse, A. Borhidi, L. Catasús, A. López & T. Pócs, HFC 38198 (B, HAJB; plus 2 sheets at JE not seen, H. Manitz, pers. comm.).

Acknowledgements

Our gratitude to M. Sc. Wilder Carmenate, M. Sc. José Luis Gómez and M. Sc. Waldo Bonet, from the Botanical Garden of Holguín, who rediscovered the population of

Picrasma pauciflora at Loma El Templo. We are grateful to W. Wayt Thomas (NY) for his comments and suggestions on an early version of the manuscript, which contributed to improving the final version, also Hermann Manitz (JE) and José Rubens Pirani (São Paulo).

References

- Blume C. L. 1825[–1827]: Bijdragen tot de flora van Nederlandsch Indië **5**. – Batavia: Lands Drukkerij.
- Capote R. P. & Berazaín R. 1984: Clasificación de las formaciones vegetales de Cuba. – Revista Jard. Bot. Nac. Univ. Habana **5(2)**: 27–75.
- Clayton J. W. 2011: *Simaroubaceae* DC. – Pp. 408–423 in: Kubitzki K. (ed.), The families and genera of vascular plants **10**. Flowering plants. Eudicots: *Sapindales*, *Cucurbitales*, *Myrtales*. – Berlin & Heidelberg: Springer.
- IUCN 2012: IUCN Red List categories and criteria: version 3.1, ed. 2. – Gland & Cambridge: IUCN.
- Palacios W. A. 2015: *Picrasma longistamina*, una nueva especie de *Simaroubaceae* de los Andes del Ecuador. – Neotrop. Biodivers. **1(1)**: 60–63.
- Thomas W. W., Mitchell J. D., Pell S. & Noa-Monzón A. 2011: *Euleria* (*Anacardiaceae*) is *Picrasma* (*Simaroubaceae*): the genus *Picrasma* in Cuba. – Brittonia **63**: 419–424.

Willdenowia

Open-access online edition [bioone.org/journals/willdenowia](https://complete.bioone.org/journals/willdenowia)



Online ISSN 1868-6397 · Print ISSN 0511-9618 · Impact factor 1.500

Published by the Botanic Garden and Botanical Museum Berlin, Freie Universität Berlin

© 2019 The Authors · This open-access article is distributed under the CC BY 4.0 licence